LP-170

Pico-ITX

User's Manual

Edition 2.0
2013/7/29

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Packing List:

Please check the package content before you starting using the board.

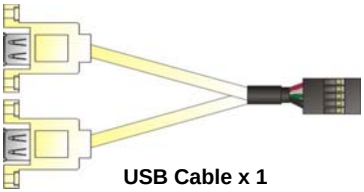
Hardware:

LP-170 "PICO-ITX Miniboard" x 1

Cable Kit:

DC_IN Power Cable x 1
(OALDC-3)

SATA Cable x 1
(OALSATA-L)

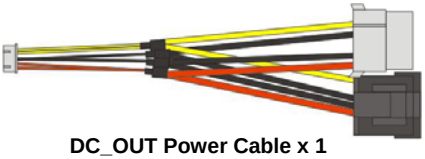


USB Cable x 1
(OALUSBA-3)

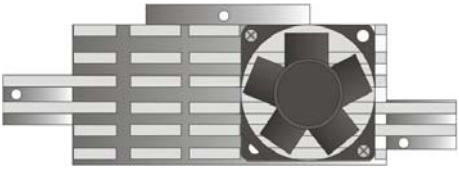
Audio Cable x 1
(OALPJ-HDUNB)

PS/2 Keyboard & Mouse Cable x 1
(OALPS2/MK)

Dual COM PORT cable x 1
(OALES-BKU2NB)



DC_OUT Power Cable x 1
(OALS1P1-6P-L20)



LP-170G/H/A/C Heatsink with Fan x 1
(OHS-170)

Option:

Pennal Inverter Cable x 1

(OALINV-5P-L15)

Printed Matters:

Driver CD x 1 (Including User's Manual)

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Chapter 1 <Introduction>

1.1 <Product Overview>

LP-170G /H /A /C is the PICO-ITX miniboard, with Intel® Atom N450 /D410 /D510 /D525 processor, integrated GMA3150 graphics, Intel® ICH8-M, DDR2 SO-DIMM memory, Realtek HD Audio, CF, SATAII and Intel® 82583V Gigabit LAN.

Intel® Atom Processor

The Intel® Atom N450 (D410 /D510 /D525) processor supports one channel of 667 (667/800)MHz DDR2 SDRAM. The chipset features power-efficient graphics with an integrated 18-bit 3D graphics engine based on Intel® Graphics Media Accelerator 3150 architecture with LVDS, CRT display ports. The DMI is designed into the Pineview-M(D) processor to provide an efficient high-bandwidth communication channel between the processor and the ICH8M.

Embedded Intel® ICH8-M

The board integrates Intel® ICH8M. It provides I/O capabilities and flexibility via high-bandwidth interfaces such as PCIE and Hi-Speed USB 2.0 connectivity. Serial ATA. HD Audio.

Flexible Extension Interface

The board also provides Compact Flash Type II socket and one PCIE mini card socket.

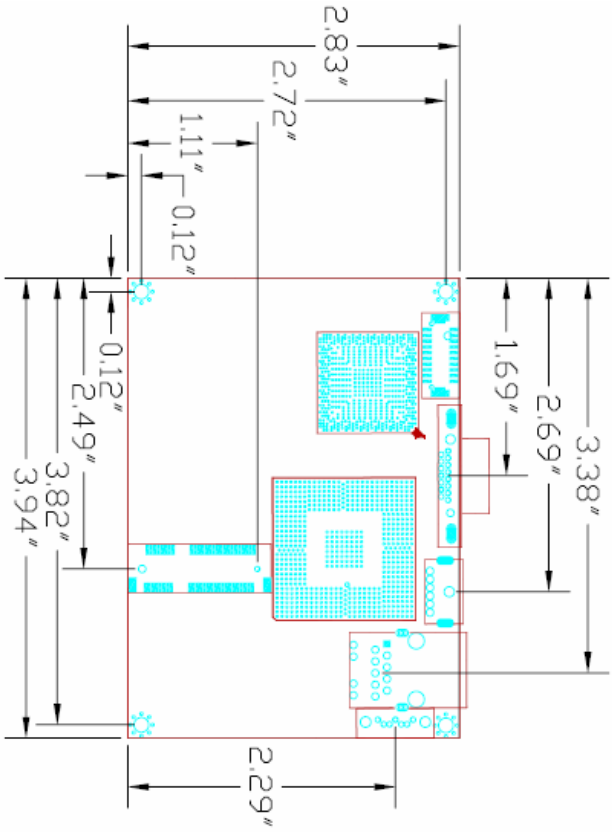
1.2 <Product Specification>

General Specification	
Form Factor	PICO-ITX miniboard
CPU	Intel® Atom N450 processor 1.66GHz (LP-170G) Intel® Atom D410 processor 1.66GHz (LP-170H) Intel® Atom D510 processor 1.66GHz (LP-170A) Intel® Atom D525 processor 1.8GHz (LP-170C) Package type: FCBGA559
Memory	1 x 200-pin DDR2 SO-DIMM 667MHz SDRAM up to 2GB (LP-170G Only) 1 x 200-pin DDR2 SO-DIMM 667MHz SDRAM up to 4GB (LP-170H/ A/ C Only) Unbufferred, none-ECC memory supported only
Chipset	Intel® ICH8M
BIOS	Phoenix-Award v6.00PG 8Mb SPI flash BIOS
Green Function	Power saving mode includes doze, standby and suspend modes. ACPI version 1.0 and APM version 1.2 compliant
Watchdog Timer	System reset programmable watchdog timer with 1 ~ 255 sec./min. of timeout value
Real Time Clock	Intel® ICH8-M built-in RTC with lithium battery
Enhanced IDE	One CompactFlash Type II socket on solder side
Serial ATA	Intel® ICH8M integrates 1 Serial ATAII interfaces (No RAID Function) Up to 300MB/s of transfer rate
Multi-I/O Port	
Chipset	Intel® SCH with Winbond® W83627DHG controller
Serial Port	Two RS-232 serial port
USB Port	Four internal Hi-Speed USB 2.0 ports with 480Mbps of transfer rate
K/B & Mouse	PS/2 keyboard and mouse port
VGA Display Interface	
Chipset	Intel® Atom N450 processor (System Controller Hub) (LP-170G) Intel® Atom D410 processor (System Controller Hub) (LP-170H) Intel® Atom D510 processor (System Controller Hub) (LP-170A) Intel® Atom D525 processor (System Controller Hub) (LP-170C)
Frame Buffer	Up to 384MB shared with system memory
Display Type	CRT, LCD monitor with analog display, LVDS
Connector	External DB15 female connector Onboard 20-Pin LVDS and 5-Pin inverter connector

Ethernet Interface	
Controller	1 x Intel® 82583V Gigabit Ethernet controller
Type	Triple speed 10/100/1000Base-T auto-switching Fast Ethernet Full duplex, IEEE802.3U compliant
Connector	1 X External RJ45 connector with LED
Audio Interface	
Chipset	REALTEK ALC888
Interface	Stereo audio Line-out and MIC-in
Connector	Onboard audio connector with pin header
Expansive Interface	
PCIE mini card	1 x PCIE mini card socket
Power and Environment	
Power Requirement	DC 12V input with onboard 2-pin connector
Dimension	100 (L) x 72(H) mm
Temperature	Operating within 0 ~ 60℃ Storage within -20 ~ 85℃
Ordering Code	
LP-170G	Support Intel® Atom **N450** processor with onboard VGA, LVDS for 18bit, Audio, Giga LAN, USB2.0, CF, PCIE mini card
LP-170H	Support Intel® Atom **D410** processor with onboard VGA, LVDS for 18bit, Audio, Giga LAN, USB2.0, CF, PCIE mini card
LP-170A	Support Intel® Atom **D510** processor with onboard VGA, LVDS for 18bit, Audio, Giga LAN, USB2.0, CF, PCIE mini card
LP-170C	Support Intel® Atom **D525** processor with onboard VGA, LVDS for 18bit, Audio, Giga LAN, USB2.0, CF, PCIE mini card

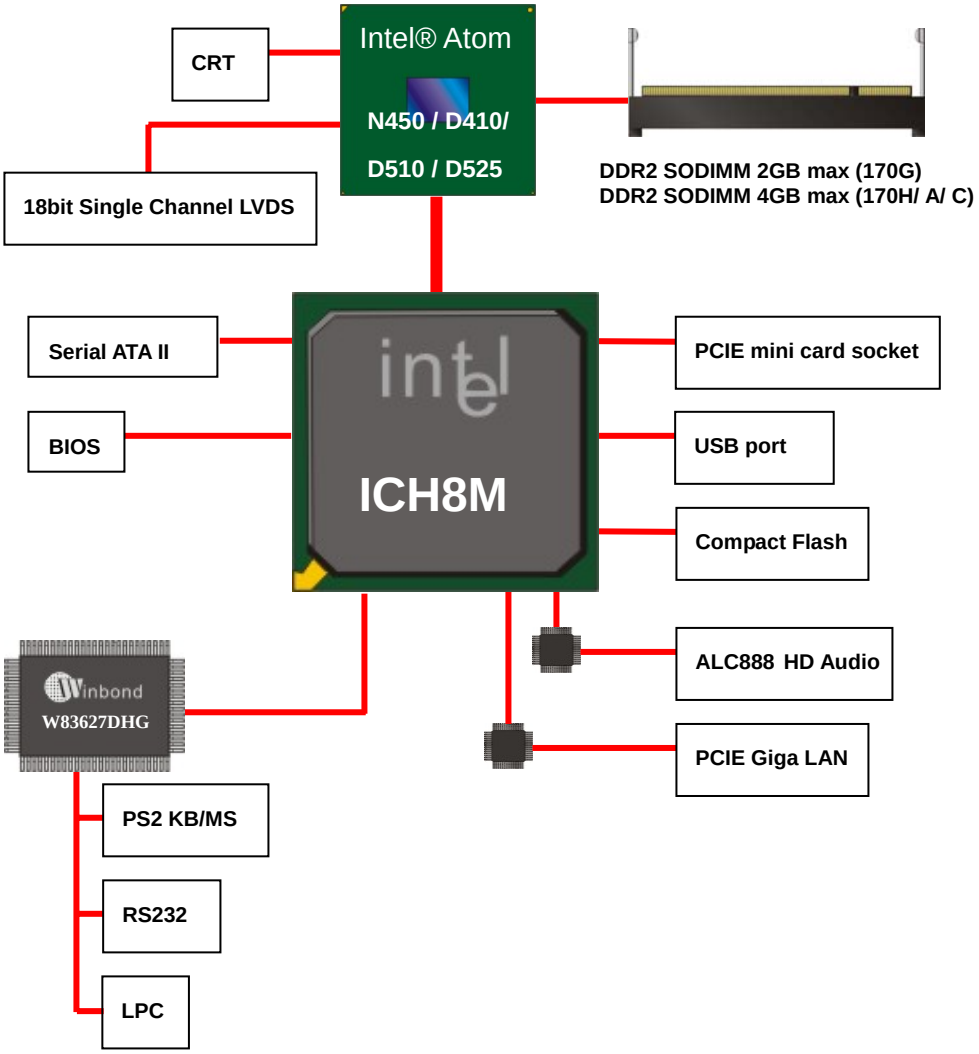
The specifications may be different as the actual production.
For further product information please visit the website at http://www.commell.com.tw

1.3 <Mechanical Drawing>



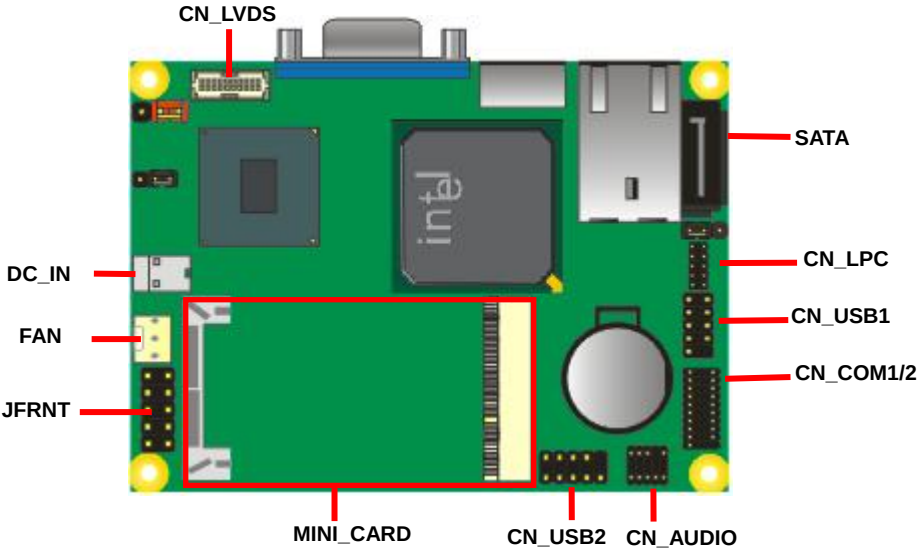
Unit: inch

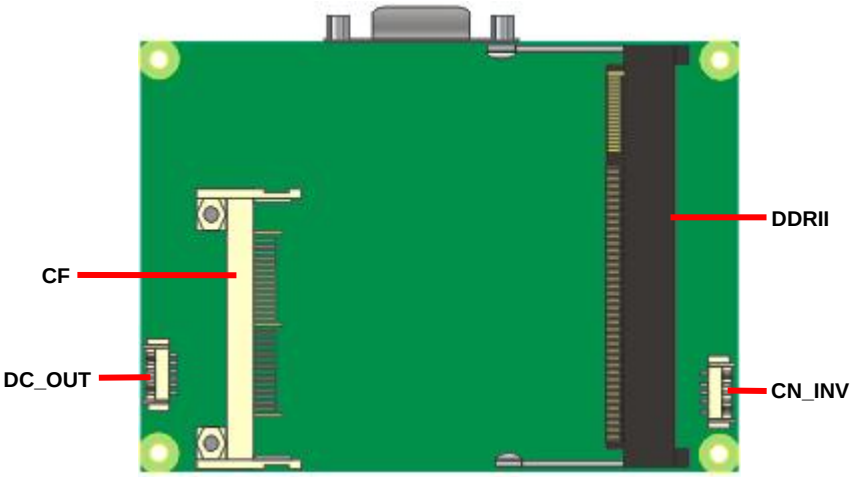
1.4 <Block Diagram>



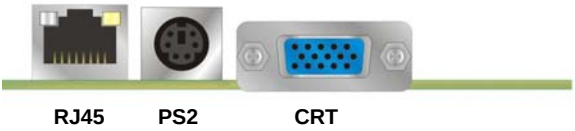
Chapter 2 <Hardware Setup>

2.1 <Connector Location>



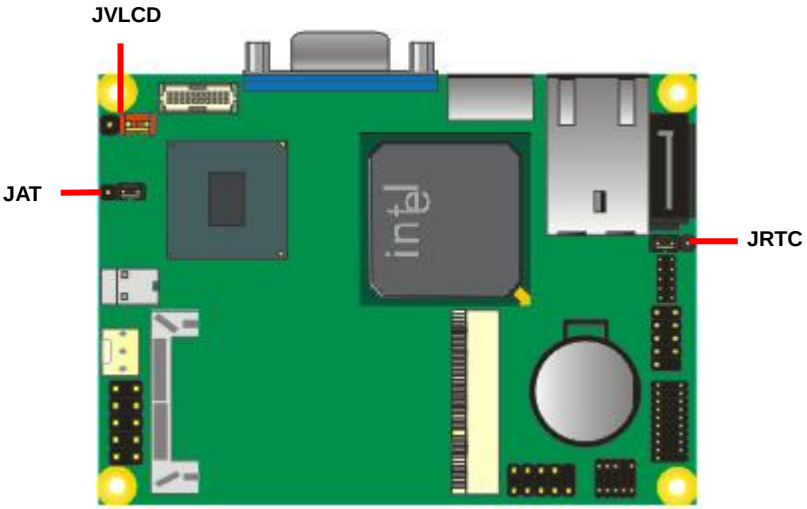


LP-170G/ H/ A/ C



2.2 <Jumper Reference>

Jumper	Function
JRTC	CMOS Operating/Clear Setting
JVLCD	LCD Panel Voltage Setting
JAT	AT/ATX Mode Setting



2.3 <Connector Reference>

2.3.1 <Internal Connector>

Connector	Function	Remark
DDRII	200 -pin DDR2 SO-DIMM SDRAM slot	Standard
SATA1	7-pin Serial ATA connector	Standard
CF	Compact Flash Type II socket	Standard
MINI_CARD	PCIE mini card socket	Standard
CN_LVDS	10 x 2-pin LVDS connector	Standard
CN_INV	5-pin LCD inverter connector	Standard
CN_USB1/2	5 x 2-pin USB connector	Standard
CN_AUDIO	5 x 2-pin audio connector	Slim
CN_COM1/2	10 x 2-pin com connector	Slim
JFRNT	10-pin switch/indicator connector	Standard
FAN	3-pin system cooler fan connector	Standard
DC_OUT	6-pin power output connector	Standard
DC_IN	DC input connector	Standard

2.3.2 <External Connector>

Connector	Function	Remark
CRT	DB15 VGA connector	Standard
PS2	PS/2 keyboard and mouse connector	Standard
RJ45	RJ45 LAN connector	Standard

2.4 <CPU and Memory Setup>

Non-ECC, unbuffered memory is supported only.

LP-170G provides one 200-pin DDR2 SO-DIMM to support DDR2 667 memory modules support up to 2GB of capacity.

Suggestion:

DDR2 SO-DIMM Modules:

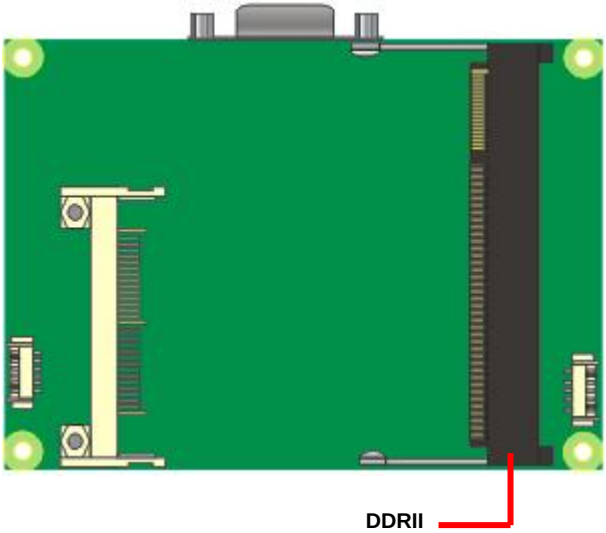
- Raw Card A = 2 Ranks of x16 SDRAMs (Double-sided)
- Raw Card C = 1 Rank of x16 SDRAMs (Single-sided)

LP-170H/ A/ C provides one 200-pin DDR2 SO-DIMM to support DDR2 667 memory modules support up to 4GB of capacity.

Suggestion:

DDR2 SO-DIMM Modules:

- Raw Card C = 1 Rank of x16 SDRAMs (Single -sided)
- Raw Card D = 1 Rank of x8 SDRAMs (Single-sided)
- Raw Card E = 2 Ranks of x8 SDRAMs (Double -sided)



2.5 <CMOS & ATX Setup>

The board's data of CMOS can be setting in BIOS. If the board refuses to boot due to inappropriate CMOS settings, here is how to proceed to clear (reset) the CMOS to its default values.

Jumper: **JRTC**

Type: Onboard 3-pin jumper

JRTC	Mode
1-2	Clear CMOS
2-3	Normal Operation

Default setting

Jumper: **JAT**

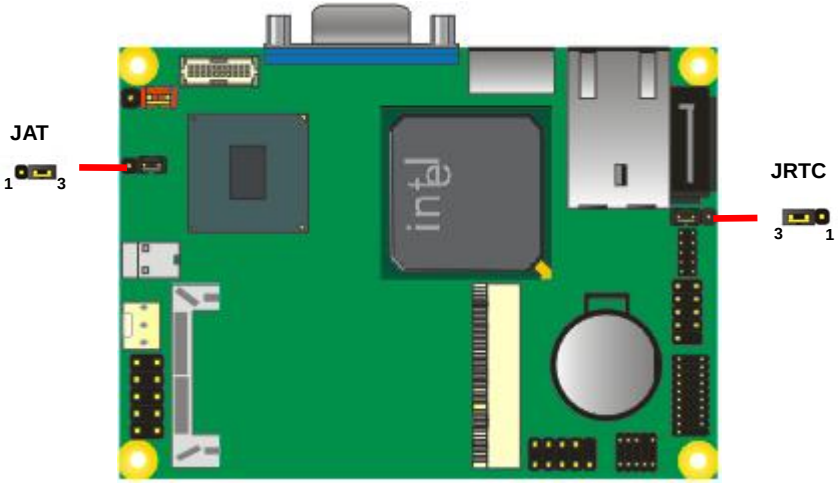
Type: onboard 3-pin jumper

JAT	Mode
1-2	AT Mode
2-3	ATX Mode

Default setting

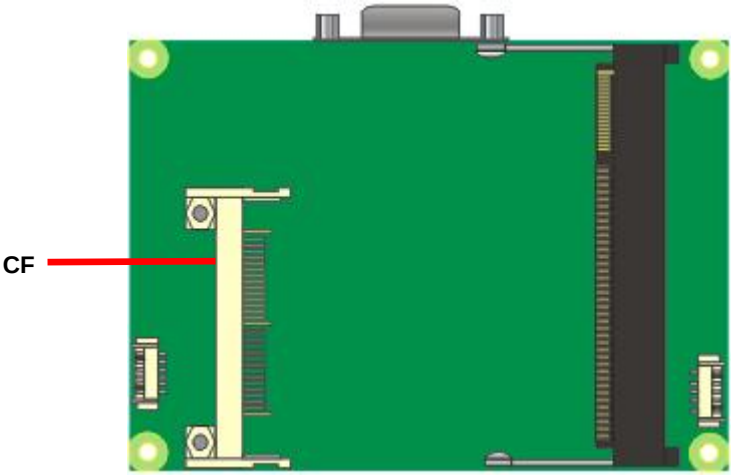
AT: auto-power-on

ATX: no auto-power-on



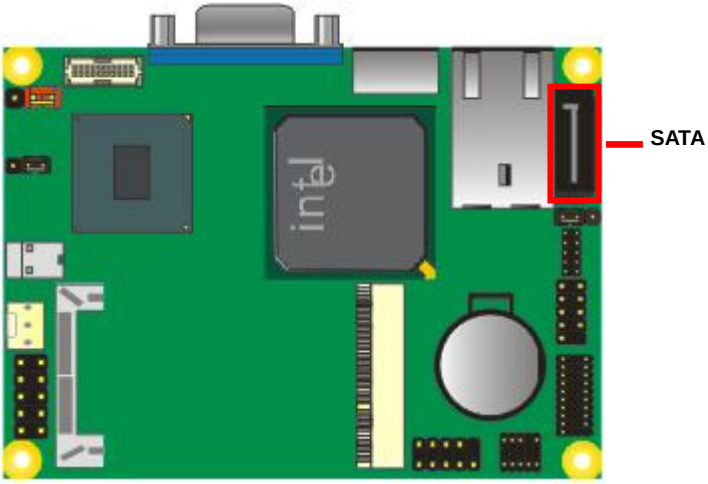
2.6 <CF Interface>

The board has one Compact Flash Type II socket on the solder side.



2.7 <Serial ATA Interface>

Based on Intel ICH8M, the board provides one Serial ATAII interfaces with up to 300MB/s of transfer rate.



2.8 <LAN Interface>

The Intel® 82583v supports triple speed of 10/100/1000Base-T, with IEEE802.3 compliance.

2.9 <Onboard Display Interface>

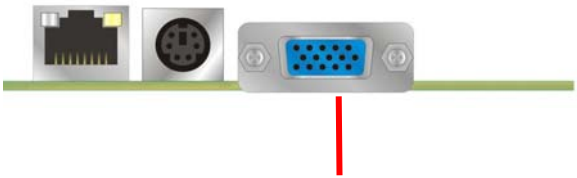
Based on Intel® Atom N450 with built-in GMA (Graphic Media Accelerator) 3150 graphics, the board provides one DB15 on real external I/O port, and one 20-pin LVDS interface with 5-pin LCD backlight inverter connector. The board provides dual display function with clone mode and extended desktop mode for CRT and LVDS.

2.9.1 <Analog VGA Interface>

Please connect your CRT or LCD monitor with DB15 male connector to the onboard DB15 female connector on rear I/O port.

LP-170G supports 1400 x 1050 (WUXGA) resolution displays.

LP-170H/ A / C supports 2048 x 1536 (WUXGA) resolution displays.

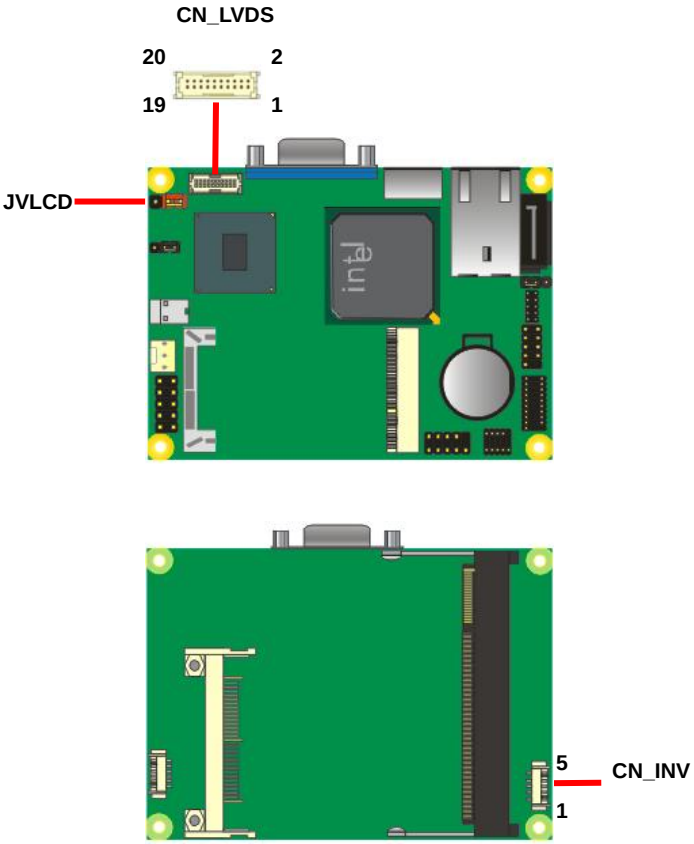


CRT

2.9.2 <Digital Display>

The board provides one 20-pin LVDS connector for 18 bit single channel panels, LP-170G supports 1280 x 800 (WUXGA) resolution displays.

LP-170H/ A/ C supports 1366 x 768 (WUXGA) resolution displays, with one LCD backlight inverter connector and one jumper for panel voltage setting



Connector: **CN_INV**
Type: 5-pin Inverter power connector
Connector model: **molex_53261-5pin** or compatible

Pin	Description
1	+12V
2	GND
3	GND
4	GND
5	ENABKL

Jumper: **JVLCD**
Type: 3-pin Power select jumper

Pin	Description
1-2	+5V
2-3	+3.3V

Default: 2-3

Connector: **CN_LVDS**
Type: onboard 20-pin connector for LVDS connector
Connector model: **HIROSE DF13-20DP-1.25V** or compatible

Pin	Signal	Pin	Signal
2	LCDVCC	1	LCDVCC
4	GND	3	GND
6	TXL0P	5	TXL0N
8	TXL1N	7	GND
10	GND	9	TXL1P
12	TXL2P	11	TXL2N
14	TXLCKN	13	GND
16	GND	15	TXLCKP
18	SMBDATA	17	SMBCLK
20	GND	19	GND

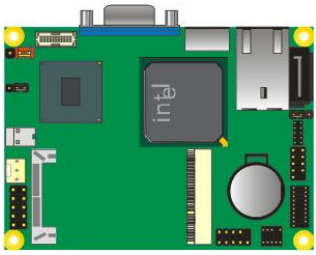
To setup the LCD, you need the component below:

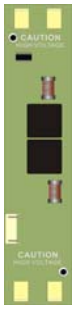
1. A panel with LVDS interfaces.
2. An inverter for panel's backlight power.
3. A LCD cable and an inverter cable.

For the cables, please follow the pin assignment of the connector to make a cable, because every panel has its own pin assignment, so we do not provide a standard cable; please find a local cable manufacture to make cables.

LCD Installation Guide:

1. Preparing the LP-170, LCD panel and the backlight inverter



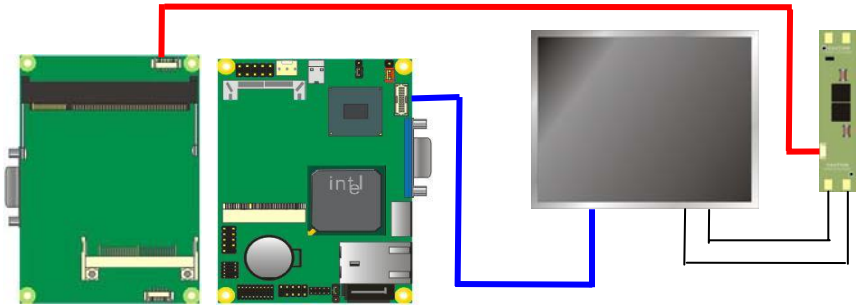


2. Please check the datasheet of the panel to see the voltage of the panel, and set the jumper **JVLCD** to +5V or +3.3V.
3. You would need a LVDS type cable.

Panel side

Board side

connect all of the devices well.



After setup the devices well, you need to select the LCD panel type in the BIOS.

Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features
Item Help
Menu Level
System BIOS Cacheable [Enabled]
Memory Hole At 15M-16M [Disabled]
PCI Express Root Port Func [Press Enter]
Disable MCHBAR MMIO [Enabled]
On-Chip Frame Buffer Size [8MB]
DVMT Mode [Enable]
Total GFX Memory [128MB]
Boot Type [Auto]
LCD Type [3]

The panel type mapping is list below:

LP-170 BIOS panel type selection form	
On board Single channel LVDS	
18bit	
NO.	**Output format**
1	640 x 480
2	800 x 480
3	800 x 600
4	1024 x 600
5	1024 x 768
6	1280 x 768

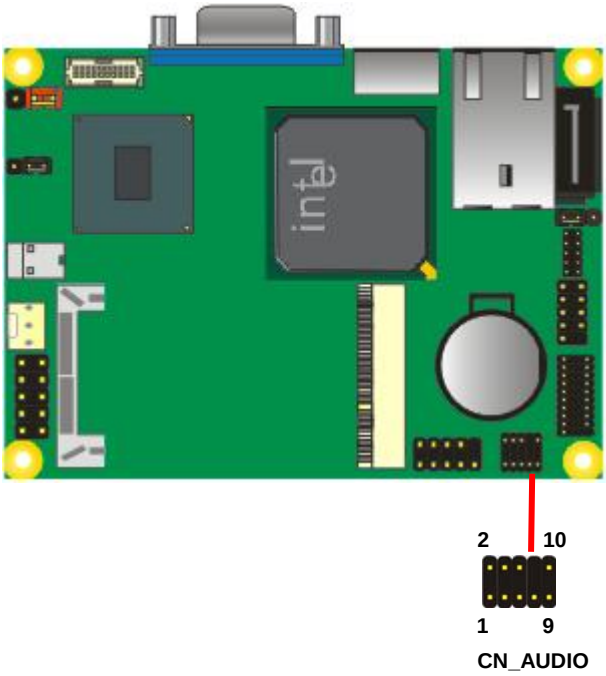
2.10 <Onboard Audio Interface>

The board provides the onboard high definition audio with Realtek ALC888

Connector: CN_AUDIO

Type: 10-pin (2 x 5) 1.27mm x 2.54mm-pitch header

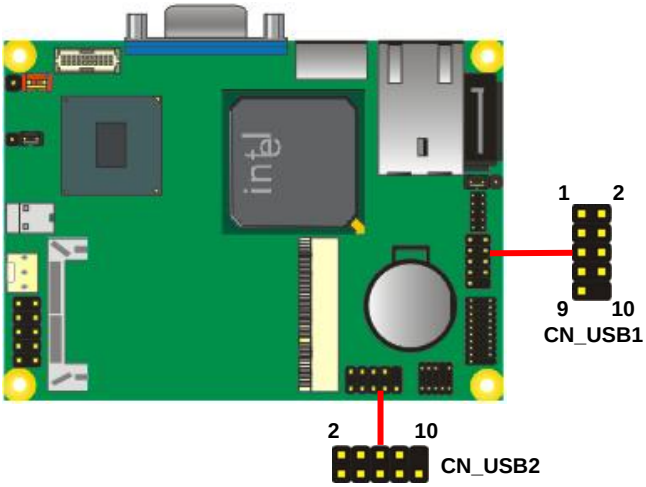
Pin	Description	Pin	Description
1	MIC_L	2	Ground
3	MIC_R	4	N/C
5	LINE OUT_R	6	MIC Detect
7	SENSE	8	N/C
9	LINE OUT_L	10	LINE OUT Detect



2.11 <USB2.0 Interface>

Based on Intel® ICH8-M, the board provides 4 USB2.0 ports. The USB2.0 interface provides up to 480Mbps of transferring rate.

Interface	USB2.0
Controller	ICH8-M
Transfer Rate	Up to 480Mb/s
Output Current	500mA



Connector: **CN_USB**
Type: 10-pin (5 x 2) header for USB Port

Pin	Description	Pin	Description
1	VCC	2	VCC
3	Data0-	4	Data1-
5	Data0+	6	Data1+
7	Ground	8	Ground
9	Ground	10	N/C

PS: The USB2.0 will be only active when you connecting with the USB2.0 devices, if you insert an USB1.1 device, the port will be changed to USB1.1 protocol automatically. The transferring rate of USB2.0 as 480Mbps is depends on device capacity, exact transferring rate may not be up to 480Mbps.

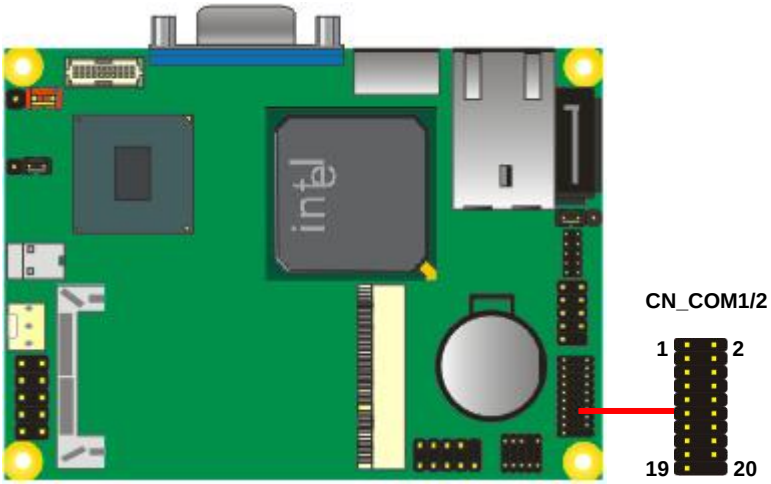
2.12 <Serial Port Jumper Setting >

The board provides two RS232 serial ports.

Connector: **CN_COM1/2**

Type: 20-pin (10 x 2) 1.27mm x 2.54mm-pitch header for COM1/2

Pin	Description	Pin	Description
1	MDCD1	2	MSIN1
3	MSO1	4	MDTR1
5	GND	6	MDSR1
7	MRTS1	8	MCTS1
9	MRI1	10	NC
11	MDCD2	12	MSIN2
13	MSO2	14	MDTR2
15	GND	16	MDSR2
17	MRTS2	18	MCTS2
19	MRI2	20	NC



2.13 <Power & FAN Connector >

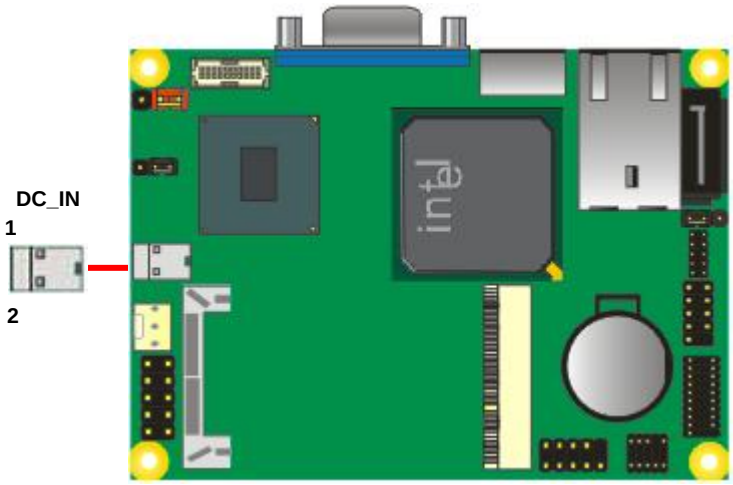
The board requires DC input with 2-pin header, the input voltage is 12V, for the input current, please take a reference of the power consumption report on appendix.

2.13.1 <Power Input>

Connector: DC_IN

Type: 2-pin header

Pin	Description	Pin	Description
1	Ground	2	+12V



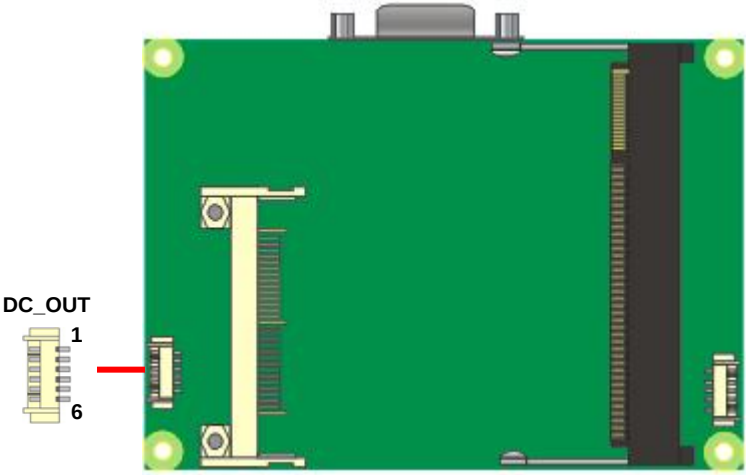
2.13.2 <Power Output>

Connector: **DC_OUT**

Type: 6-pin connector for +5V/+12V **output**

Pin	Description
1	+12V
2	+12V
3	GND
4	GND
5	+5V
6	+5V

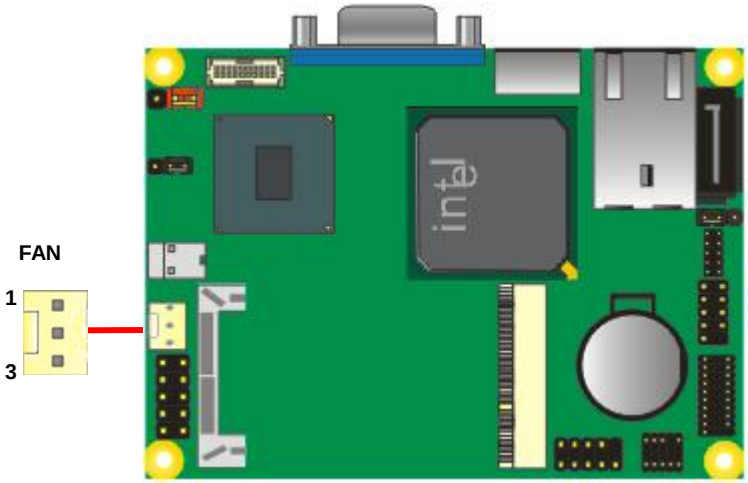
Note: Maximum output current 12V/1A, 5V/1A



2.13.3 <Fan Connector>

Connector: **SYSFAN, CPUFAN**
Type: 3-pin fan wafer connector

Pin	Description	Pin	Description	Pin	Description
1	Ground	2	+12V	3	Speed detect

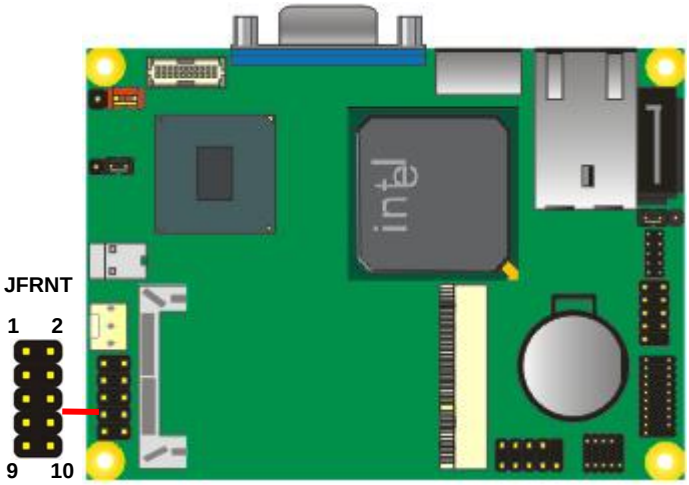


2.14 <Indicator and Switch>

The **JFRNT** provides front control panel of the board, such as power button, reset and beeper, etc. Please check well before you connecting the cables on the chassis.

Connector: **JFRNT**
Type: onboard 10-pin (2 x 5) 2.54-pitch header

Function	Signal	PIN		Signal
Power	PWRBT-	1	2	PWRBT+
Speaker	SPK-	3	4	SPK+
HDD LED	HLED-	5	6	HLED+
Power LED	PWRLED-	7	8	PWRLED+
Reset	Reset+	9	10	Reset-



Chapter 3 <BIOS Setup>

The motherboard uses the Award BIOS for the system configuration. The Award BIOS in the single board computer is a customized version of the industrial standard BIOS for IBM PC AT-compatible computers. It supports Intel® x86 and compatible CPU architecture based processors and computers. The BIOS provides critical low-level support for the system central processing, memory and I/O sub-systems.

The BIOS setup program of the single board computer let the customers modify the basic configuration setting. The settings are stored in a dedicated battery-backed memory, NVRAM, retains the information when the power is turned off. If the battery runs out of the power, then the settings of BIOS will come back to the default setting.

The BIOS section of the manual is subject to change without notice and is provided here for reference purpose only. The settings and configurations of the BIOS are current at the time of print, and therefore they may not be exactly the same as that displayed on your screen.

To activate CMOS Setup program, press ＜DEL＞ key immediately after you turn on the system. The following message "Press DEL to enter SETUP" should appear in the lower left hand corner of your screen. When you enter the CMOS Setup Utility, the Main Menu will be displayed as **Figure 4-1**. You can use arrow keys to select your function, press ＜Enter＞ key to accept the selection and enter the sub-menu.

Figure 4-1 CMOS Setup Utility Main Screen

Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features
Advanced BIOS Features
Advanced Chipset Features
Integrated Peripherals
Power Management Setup
PnP/PCI Configurations
PC Health Status
Frequency/Voltage Control
Load Fail-Safe Defaults
Load Optimized Defaults
Set Supervisor Password
Set User Password
Save & Exit Setup
Exit Without Saving
Esc : Quit F9 : Menu in BIOS ↑ ↓ → ← : Select Item
F10 : Save & Exit Setup
Time, Date, Hard Disk Type...

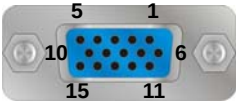
Appendix A <I/O Port Pin Assignment>

A.1 <LPC Port>

Connector: **CN_LPC**
Type: 10-pin header for LPC Port

Pin	Description	Pin	Description
1	LPC_CLK	2	RESET-
3	LFRAME-	4	LAD3
5	LAD2	6	LAD1
7	LAD0	8	+3.3V
9	Ground	10	Ground

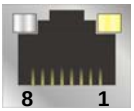
A.2 < CRT Port >



Connector: CRT
Type: 15-pin D-sub female connector on rear panel

Pin	Description	Pin	Description	Pin	Description
1	RED	6	Ground	11	N/C
2	GREEN	7	Ground	12	5VCDA
3	BLUE	8	Ground	13	HSYNC
4	N/C	9	LVGA5V	14	VSYNC
5	Ground	10	Ground	15	5VCLK

A.3 <LAN Port>



Connector: **RJ45**
Type: RJ45 connector with LED on rear panel

Pin	1	2	3	4	5	6	7	8
Description	TRD0+	TRD0-	TRD1+	TRD2+	TRD2-	TRD1-	TRD3+	TRD3-

Appendix B <Flash BIOS>

B.1 BIOS Auto Flash Tool

The board is based on Award BIOS and can be updated easily by the BIOS auto flash tool. You can download the tool online at the address below:

http://www.award.com
http://www.commell.com.tw/support/support.htm

File name of the tool is "awdflash.exe", it's the utility that can write the data into the BIOS flash ship and update the BIOS.

B.2 Flash Method

1. Please make a bootable floppy disk.
2. Get the last .bin files you want to update and copy it into the disk.
3. Copy awardflash.exe to the disk.
4. Power on the system and flash the BIOS. (Example: C:/ awardflash XXX.bin)
5. Re-star the system.

Any question about the BIOS re-flash please contact your distributors or visit the web-site at below:

http://www.commell.com.tw/support/support.htm

Appendix C <System Resources>

C.1 <I/O Port Address Map> (LP-170G)

[00000000 - 0000000F] Direct memory access controller
[00000000 - 00000CF7] PCI bus
[00000010 - 0000001F] Motherboard resources
[00000020 - 00000021] Programmable interrupt controller
[00000022 - 0000003F] Motherboard resources
[00000040 - 00000043] System timer
[00000044 - 0000005F] Motherboard resources
[00000060 - 00000060] Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000061 - 00000061] System speaker
[00000062 - 00000063] Motherboard resources
[00000064 - 00000064] Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000065 - 0000006F] Motherboard resources
[00000070 - 00000073] System CMOS/real time clock
[00000074 - 0000007F] Motherboard resources
[00000080 - 00000090] Direct memory access controller
[00000091 - 00000093] Motherboard resources
[00000094 - 0000009F] Direct memory access controller
[000000A0 - 000000A1] Programmable interrupt controller
[000000A2 - 000000BF] Motherboard resources
[000000C0 - 000000DF] Direct memory access controller
[000000E0 - 000000EF] Motherboard resources
[000000F0 - 000000FF] Numeric data processor
[000001F0 - 000001F7] Primary IDE Channel
[00000274 - 00000277] ISAPNP Read Data Port
[00000279 - 00000279] ISAPNP Read Data Port
[000002F8 - 000002FF] Communications Port (COM2)
[00000378 - 0000037F] Printer Port (LPT1)
[000003B0 - 000003BB] Intel(R) Graphics Media Accelerator 3150
[000003C0 - 000003DF] Intel(R) Graphics Media Accelerator 3150
[000003F6 - 000003F6] Primary IDE Channel
[000003F8 - 000003FF] Communications Port (COM1)
[00000400 - 000004BF] Motherboard resources
[000004D0 - 000004D1] Motherboard resources
[00000500 - 0000051F] Intel(R) ICH8 Family SMBus Controller - 283E
[00000778 - 0000077B] Printer Port (LPT1)
[00000800 - 0000087F] Motherboard resources
[00000880 - 0000088F] Motherboard resources
[00000A79 - 00000A79] ISAPNP Read Data Port
[00000D00 - 0000FFFF] PCI bus

[0000E000 - 0000EFFF] Intel(R) ICH8 Family PCI Express Root Port 1 - 283F
[0000EF00 - 0000EF1F] Intel(R) 82583V Gigabit Network Connection
[0000F300 - 0000F30F] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
[0000F400 - 0000F40F] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
[0000F500 - 0000F503] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
[0000F600 - 0000F607] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
[0000F700 - 0000F703] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
[0000F800 - 0000F807] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
[0000F900 - 0000F90F] Intel(R) ICH8M Ultra ATA Storage Controllers - 2850
[0000FA00 - 0000FA1F] Intel(R) ICH8 Family USB Universal Host Controller - 2832
[0000FB00 - 0000FB1F] Intel(R) ICH8 Family USB Universal Host Controller - 2831
[0000FC00 - 0000FC1F] Intel(R) ICH8 Family USB Universal Host Controller - 2830
[0000FD00 - 0000FD1F] Intel(R) ICH8 Family USB Universal Host Controller - 2835
[0000FE00 - 0000FE1F] Intel(R) ICH8 Family USB Universal Host Controller - 2834
[0000FF00 - 0000FF07] Intel(R) Graphics Media Accelerator 3150

C.2 <Memory Address Map > (LP-170G)

[00000000 - 0009FFFF] System board
[000A0000 - 000BFFFF] Intel(R) Graphics Media Accelerator 3150
[000A0000 - 000BFFFF] PCI bus
[000C0000 - 000DFFFF] PCI bus
[000E0000 - 000EFFFF] System board
[000F0000 - 000FFFFF] System board
[00100000 - 3F58FFFF] System board
[3F590000 - 3F5FFFFF] System board
[3F600000 - 3F6FFFFF] System board
[3F700000 - FEBFFFFF] PCI bus
[D0000000 - DFFFFFFF] Intel(R) Graphics Media Accelerator 3150
[E0000000 - EFFFFFFF] Motherboard resources
[FD900000 - FD9FFFFF] Intel(R) ICH8 Family PCI Express Root Port 1 - 283F
[FDA00000 - FDAFFFFF] Intel(R) ICH8 Family PCI Express Root Port 1 - 283F
[FDAC0000 - FDADFFFF] Intel(R) 82583V Gigabit Network Connection
[FDAFC000 - FDAFFFFF] Intel(R) 82583V Gigabit Network Connection
[FDD00000 - FDDFFFFF] Intel(R) Graphics Media Accelerator 3150
[FDE80000 - FDEFFFFF] Intel(R) Graphics Media Accelerator 3150
[FDFF8000 - FDFFBFFF] Microsoft UAA Bus Driver for High Definition Audio
[FDFFD000 - FDFFD0FF] Intel(R) ICH8 Family SMBus Controller - 283E
[FDFFE000 - FDFFE3FF] Intel(R) ICH8 Family USB2 Enhanced Host Controller - 2836
[FDFFF000 - FDFFF3FF] Intel(R) ICH8 Family USB2 Enhanced Host Controller - 283A
[FEB80000 - FEBFFFFF] Intel(R) Graphics Media Accelerator 3150
[FEC00000 - FEC00FFF] System board
[FED00000 - FED000FF] System board
[FED00000 - FED003FF] High precision event timer
[FED13000 - FED1FFFF] System board
[FED20000 - FED9FFFF] System board
[FEE00000 - FEE00FFF] System board
[FFB00000 - FFB7FFFF] System board
[FFB80000 - FFBFFFFF] Intel(R) 82802 Firmware Hub Device
[FFF00000 - FFFFFFFF] System board

C.3 < System IRQ Resources > (LP-170G)

(ISA) 0	High precision event timer
(ISA) 1	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
(ISA) 3	Communications Port (COM2)
(ISA) 4	Communications Port (COM1)
(ISA) 8	High precision event timer
(ISA) 9	Microsoft ACPI-Compliant System
(ISA) 13	Numeric data processor
(ISA) 14	Primary IDE Channel
(PCI) 15	Intel(R) ICH8 Family SMBus Controller - 283E
(PCI) 16	Intel(R) 82583V Gigabit Network Connection
(PCI) 16	Intel(R) Graphics Media Accelerator 3150
(PCI) 16	Intel(R) ICH8 Family PCI Express Root Port 1 - 283F
(PCI) 16	Intel(R) ICH8 Family USB Universal Host Controller - 2834
(PCI) 18	Intel(R) ICH8 Family USB Universal Host Controller - 2832
(PCI) 18	Intel(R) ICH8 Family USB2 Enhanced Host Controller - 283A
(PCI) 19	Intel(R) ICH8 Family USB Universal Host Controller - 2831
(PCI) 19	Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
(PCI) 21	Intel(R) ICH8 Family USB Universal Host Controller - 2835
(PCI) 22	Microsoft UAA Bus Driver for High Definition Audio
(PCI) 23	Intel(R) ICH8 Family USB Universal Host Controller - 2830
(PCI) 23	Intel(R) ICH8 Family USB2 Enhanced Host Controller - 2836

Appendix E <Watch Dog timer Setting >

The watchdog timer makes the system auto-reset while it stops to work for a period. The integrated watchdog timer can be setup as system reset mode by program.

Timeout Value Range

- 1 to 255
- Second or Minute

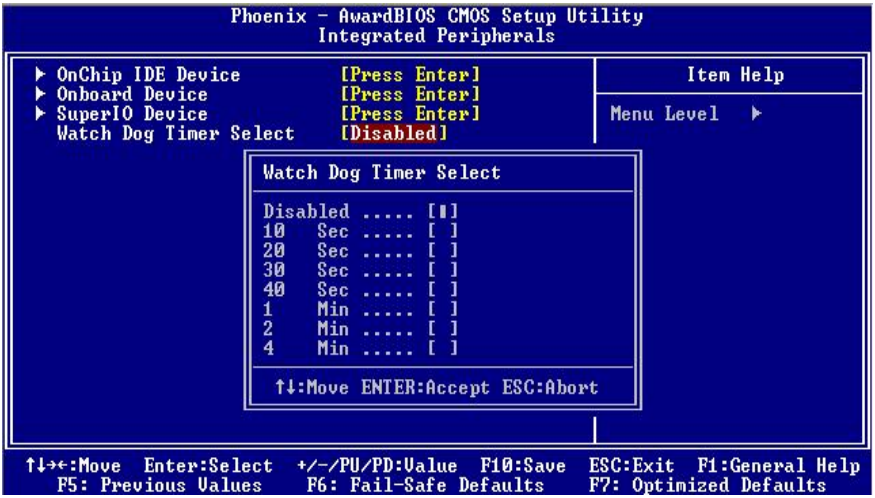
Program Sample

Watchdog timer setup as system reset with 5 second of timeout

2E, 87	
2E, 87	
2E, 07	
2F, 08	Logical Device 8
2E, 30	
2F, 01	Activate
2E, F5	
2F, 00	Set as Second*
2E, F6	
2F, 05	Set as 5

* Minute: bit 3 = 1; Second: bit 3 = 0

You can select Timer setting in the BIOS, after setting the time options, the system will reset according to the period of your selection.


Phoenix - AwardBIOS CMOS Setup Utility
Integrated Peripherals
OnChip IDE Device [Press Enter]
Onboard Device [Press Enter]
SuperIO Device [Press Enter]
Watch Dog Timer Select [Disabled]
Item Help
Menu Level
Watch Dog Timer Select
Disabled ..... [ ]
10 Sec ..... [ ]
20 Sec ..... [ ]
30 Sec ..... [ ]
40 Sec ..... [ ]
1 Min ..... [ ]
2 Min ..... [ ]
4 Min ..... [ ]
↑↓:Move ENTER:Accept ESC:Abort
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Contact Information

Any advice or comment about our products and service, or anything we can help you please don't hesitate to contact with us. We will do our best to support you for your products, projects and business.

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Twitter	https://twitter.com/Taiwan_Commate

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